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EXAMINER	
DAILEY, THOMAS J	
ART UNIT	PAPER NUMBER
2152	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/667,423	CATTERALL ET AL.	
	Examiner	Art Unit	
	THOMAS J. DAILEY	2152	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 October 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-30 and 32-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-30 and 32-36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 34-36 were added by the amendment filed on October 5, 2007.
2. Claims 2 and 31 were cancelled by the amendment.
3. Claims 1, 3-30, and 32-36 are pending.

Response to Arguments

4. The examiner notes the amendments and arguments filed October 5, 2007 were filed under the incorrect serial number (10/667243, this case's serial number being 10/667423) and notes that this was the cause of the delayed response and further encourages the applicant to fix any errors in their own case file to reflect the correct case number.

5. The applicant's amendments have overcome the U.S.C. 112 rejections directed at claims 9-20 and 27-33 and those rejections have been withdrawn and the amendments to the specification has been accepted.

6. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

Specification

7. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Claim

21 uses the term "Local Area Network Internet Protocol-based protocol." This lacks antecedent basis in the specification. The specification appears to consistently use the term Internet Protocol (IP) when broadly describing what operates on the Local area networks.

Claim Objections

8. Claim 1 is objected to for the following informality:

(a) Claim 1 recites, "using Internet Protocol," (lines 6-7); it should recite, "using *an* Internet Protocol."

Claim Rejections - 35 USC § 112

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 21-36 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

11. Claim 21 recites, "and using a Local Area Network Internet Protocol-based protocol." It is unclear what the applicant is intending to claim as the examiner does not having a reasonable interpretation of such a protocol. The applicant's specification appears to consistently use the term Internet Protocol (IP).

12. Claims 22-30 and 32-36 are rejected due to their dependence on claim 21.

Claim Rejections - 35 USC § 102

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

14. Claims 1 and 3 are rejected under 35 U.S.C. 102(e) as being anticipated by Muzaffer et al (US Pub. 2003/0223736), hereafter "Muzaffer."

15. As to claim 1, Muzaffer discloses a communication circuit for use within a vehicle, the circuit comprising:

a first network port ([0023], lines 1-3, network port on DVD player reads as the first network port); and

a second network port located remote from the first network port and digitally connected thereto, wherein the first and second network ports are connected to one another via an IEEE 802.3 digital link and using Internet Protocol so as to enable high speed audio and video signal communication therebetween ([0023],

lines 5-13, the DVD player sends and receives audio/ visual data via its network port over a Ethernet LAN (IEEE 802.3 digital links) to other network devices (any of which that receive or send the audio/visual data reading on the second network port, see Fig. 1).

16. As to claim 3, Muzaffer discloses the first network port is connected to a first network segment and the second network port is connected to a second network segment (Fig. 1, DVD player, label 10, (first network port) is separated from various networked devices (label 450) in the LAN and includes separate segments).

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

18. Claims 1, 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ellington, Jr. (US Pub. No. 2001/0009021), hereafter "Ellington," in view of what is well known in the art.

19. As to claim 1, Ellington discloses a communication circuit for use within a vehicle (Abstract), the circuit comprising:

a first network port (Fig. 1 and [0021], any networked device on the vehicle, e.g. where a passenger's mobile computer connects to the passenger LAN (label 24)); and

a second network port located remote from the first network port and digitally connected thereto, wherein the first and second network ports are connected to one another via an IEEE 802.3 digital link and using Internet Protocol (Fig. 1, [0021], another place where a different passenger's mobile computer connects to the passenger LAN, i.e. in Fig 1, label 24, (note how there are two of these labels), [0005], discloses how it may be Ethernet).

But, Ellington does not explicitly disclose the digital link is enabled for high speed audio and video signal communication between the two ports.

However, though the exemplary embodiments disclosed by Ellington focus on PSTS RJ45, Ellington explicitly indicates Ethernet may be used ([0005]) and other types network connections ([0033]). Further, at the time of the invention one of ordinary skill in the art would view it as obvious that the Ethernet connection or other types of alternative connections used in Ellington's system could be enabled for high speed audio and video signal communication given what was common practice in the art. Therefore, Official Notice is taken (MPEP

2144.03) that it was well known in the art at the time of the invention to enable high speed audio and video signal communications in a digital link, and would have been utilized in Ellington's system to increase user appeal of system.

20. As to claim 3, Ellington discloses the first network port is connected to a first network segment and the second network port is connected to a second network segment (Fig. 1, [0021], separate wired connections connect labels 24 to the network bus, label 22)

21. As to claim 4, Ellington discloses a third network segment is connected between the first network segment and the second network segment (Fig. 1, label 22, [0021]).

22. As to claim 5, Ellington discloses each network segment includes a multi-port network hub, the first and second network ports being connected to their respective multi-port network hubs (Fig. 1, [0021], the network switch, label 18).

23. As to claim 6, Ellington discloses at least one peripheral network communication device is connected to each of the multi-port network hubs (Fig. 1, [0021], mobile computer for use by a passenger, label 16).

24. Claim 21-30 and 32-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kirrmann et al ("The IEC/IEEE Train Communication Network," Kirrmann, Hubert and Pierre A. Zuber; *IEEE Micro*, Volume 21, Issue 2 (March 2001) pages 81-92), hereafter "Kirrmann," in view of Endo et al ("JR East develops advanced commuter train: JR East, Japan, has developed an advanced commuter train which is the prototype for a new generation of commuter and suburban trains to be introduced initially in the Tokyo area" Endo, Takashi; Nomoto, Hiroshi; *International Railway Journal*, [online], May 2002, retrieved from <http://findarticles.com/p/articles/mi_m0BQQ/is_5_42/ai_86647712>), hereafter "Endo."

25. As to claim 21, Kirrmann discloses a communication circuit for use on board a train having at least two vehicles coupled together, the circuit comprising:

a first local network having a first interface and located in one vehicle(Page 82, Fig 2(b)); and

a second local Network having a second interface and located in the other vehicle (Page 82, Fig 2(b));

wherein the first interface and the second interface are digitally connected to one another by a RS-485 digital link (page 85, lines 20-25, "RS-485/120-ohm cable…").

But, Kirrmann does not disclose the networks are Local Area Networks (LANs) and the digital link using a LAN Internet Protocol-based protocol so as to enable high speed audio and video signal communication between the LANs.

However, Endo discloses Local Area Networks (LANs) in trains utilizing Internet Protocol-based protocol so as to enable high speed audio and video signal communication (page 2, lines 9-11).

Therefore it would have been obvious at the time of the invention to combine the teachings of Kirrmann and Endo in order allow Kirrmann's system to utilize a known network setup (LAN utilizing Internet Protocols) thereby allowing users to operate higher bandwidth devices.

26. As to claim 22, Kirrmann and Endo disclose the invention substantially with regard to the parent claim 21, and further disclose each of the Local Area Networks includes first, second and third Local Area Network subsystems (Kirrmann, page 85, Fig. 6).

27. As to claim 23, Kirrmann and Endo disclose the invention substantially with regard to the parent claim 22, and further disclose each Local Area Network subsystems includes a multi-port network hub (Endo, page 2, lines 2-4 and lines 9-11).

28. As to claim 24, Kirrmann and Endo disclose the invention substantially with regard to the parent claim 23, and further disclose at least one peripheral network communication device is connected to each of the multi-port network hubs (Endo, page 2, lines 2-4 and lines 9-11).

29. As to claim 25, Kirrmann and Endo disclose the invention substantially with regard to the parent claim 24, and further disclose at least one peripheral network communication device is a control head (Kirrmann, page 85, Fig. 6, "Motor control").

30. As to claim 26, Kirrmann and Endo disclose the invention substantially with regard to the parent claim 25, and further disclose at least one peripheral communication device is connected to the control head (Kirrmann, page 85, Fig. 6, devices connected to "Motor control" read on peripheral devices).

31. As to claim 27, Kirrmann and Endo disclose the invention substantially with regard to the parent claim 8 and 26, and further disclose each multi-port network hub is a multi-port IEEE 802.3 network hub (Endo, page 2, lines 2-4).

32. As to claim 15 and 28, Kirrmann and Endo disclose the invention substantially with regard to the parent claim 27, and further disclose the first interface is a

control unit having a digital link receiver port and a wire connector connected to the first network port (Kirrmann, page 85, Fig. 6).

33. As to claim 29, Kirrmann and Endo disclose the invention substantially with regard to the parent claim 28, and further disclose the control unit includes a plurality of peripheral device connector ports (Kirrmann, page 85, Fig. 6).

34. As to claim 30, Kirrmann and Endo disclose the invention substantially with regard to the parent claim 28, and further disclose the digital link is integral with a coupler coupling the two train vehicles (Kirrmann, page 82, Fig. 2(b), and page 83, Fig. 83).

35. As to claim 32, Kirrmann and Endo disclose the invention substantially with regard to the parent claim 30, and further disclose at least one of the vehicles is sectioned and articulated (Kirrman, page 82, Fig. 2(b)).

36. As to claim 33, Kirrmann and Endo disclose the invention substantially with regard to the parent claim 32, and further disclose the peripheral communication device include sign units, emergency intercoms, public address amplifiers, radio systems, consoles or laptop computers (Endo, page 2, lines 9-11)

37. Claim 7-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ellington as applied to claim 6 above, and further in view of Sullivan ("The IEEE 1473-L Communications Protocol: Experience In Rail Transit", *APTA Paper, June 2002*, accessed <http://www.tsd.org/papers/IEEE%201473-L%20Communications%20Protocol.pdf>).

38. As to claim 7, Ellington discloses the invention substantially with regard to the parent claim 6, but does not disclose at least one peripheral network communication device is a control head.

However, Sullivan discloses a networked vehicle where at least one peripheral network communication device is a control head (page 295, right-hand column lines 22-36 and page 296, Fig. 2).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Ellington and Sullivan in order utilize the already in place network of Ellington to also manage devices rather than creating a redundant network to do so.

39. As to claim 8, Ellington and Sullivan disclose the invention substantially with regard to the parent claims 7 and 25, and further disclose at least one peripheral

communication device is connected to the control head (Sullivan, page 295, right-hand column lines 22-36 and page 296, Fig. 2).

40. As to claim 9, Ellington and Sullivan disclose the invention substantially with regard to the parent claim 8 and 26, and further disclose each multi-port network hub is a multi-port IEEE 802.3. network hub (Ellington, [0005], lines 14-18).

41. As to claim 10, Ellington and Sullivan disclose the invention substantially with regard to the parent claim 9, and further disclose the first, the second and the third network segments define a first Local Area Network (Ellington, Fig. 1 and [0021]).

42. As to claim 11, Ellington and Sullivan disclose the invention substantially with regard to the parent claim 10, and further disclose the first, second and third network segments are respectively first, second and third Local Area Network subsystems (Ellington, Fig. 1, and [0021]).

43. As to claim 12, Ellington and Sullivan disclose the invention substantially with regard to the parent claim 11, and further disclose the digital link provides for at least a 1Mbps digital communication speed within the circuit (Ellington, [0005], lines 14-18).

44. As to claim 13, Ellington and Sullivan disclose the invention substantially with regard to the parent claim 12, and further disclose a train includes at least two vehicles connected together by a coupler, the first Local Area Network being located in one vehicle, a second Local Area Network being located in the other vehicle (Sullivan, page 295, right-hand column lines 15-21 and page 296, Fig. 1).

45. As to claim 14, Ellington and Sullivan disclose the invention substantially with regard to the parent claim 13, and further disclose the first Local Area Network includes a first interface and the second Local Area Network includes a second interface (Ellington, [0021]).

46. As to claim 15, Ellington and Sullivan disclose the invention substantially with regard to the parent claim 14 and 27, and further disclose the first interface is a control unit having a digital link receiver port and a wire connector connected to the first network port (Sullivan, page 295, right-hand column lines 22-36 and page 296, Fig. 2).

47. As to claim 16, Ellington and Sullivan disclose the invention substantially with regard to the parent claims 15 and 31, and further disclose at least one of the vehicles is sectioned and articulated (Sullivan, page 295, right-hand column lines 15-21 and page 296, Fig. 1).

48. As to claim 17, Ellington and Sullivan disclose the invention substantially with regard to the parent claim 16, and further disclose the coupler includes a digital link integral therewith (Sullivan, page 295, right-hand column lines 15-21 and page 296, Fig. 1).

49. As to claim 18, Ellington and Sullivan disclose the invention substantially with regard to the parent claims 17 and 30, and further disclose the digital link is an RS-485 connection (Sullivan, page 295, right-hand column lines 15-21 and page 296, Fig. 1).

50. As to claim 19, Ellington and Sullivan disclose the invention substantially with regard to the parent claim 18, and further disclose the control unit includes a plurality of peripheral device connector ports (Sullivan, page 295, right-hand column lines 22-36 and page 296, Fig. 1).

51. As to claim 20, Ellington and Sullivan disclose the invention substantially with regard to the parent claims 19 and 32, and further disclose the peripheral communication device include sign units, emergency intercoms, public address amplifiers, radio systems, consoles or laptop computers (Ellington, [0020]).

52. Claim 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kirrmann in view of Endo, as applied to claims 21-25, in further view of what was well known in the art.

53. As to claim 34, Kirrmann and Endo do not explicitly disclose a software program controls the local area networks and the RS-485 digital link and allows for connection and disconnection of the peripheral network communication device without interrupting operation, and thereby without requiring re-initialization, of the local area networks and the circuit. However, such a program to control the local area networks was a common and well known practice at the time of the invention and ensuring that if a device is disconnected from the network it does not require re-initialization of the network was well known and expected in the art (simply because if every time a device is disconnected it caused re-initialization of the network, it would cause the network to have significant amounts of downtime). Therefore, Official Notice is taken that one of ordinary skill in the art at the time of the invention would use such practices in the networks of Kirrmann and Endo as they were common knowledge/practice and utilized to improve the overall operation of a given network.

54. As to claim 35, Kirrman and Endo do not explicitly disclose a software program monitoring the health status of the Local Area Networks. However, such a program to monitor local area networks was a common and well known practice

at the time of the invention and therefore, Official Notice is taken that one of ordinary skill in the art at the time of the invention would use a program in the networks of Kirrman and Endo as it was common knowledge/practice and utilized to improve the overall operation of a given network.

55. As to claim 36, Kirrman and Endo disclose wherein the multi-network hub is configured for connection of a laptop computer thereto (Endo, page 2, lines 9-11). But Kirrman and Endo do not disclose enabling configuration of the local area networks from the laptop computer. However, configuration of local area networks from a connected laptop computer was a common and expected practice in the art at the time of the invention and therefore, Official Notice is taken that one of ordinary skill in the art at the time of the invention would enable configuration of the networks presented in Kirrman and Endo by a connected laptop, in order to allowing easier management of the network.

Conclusion

56. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

57. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed

within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

58. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas J. Dailey whose telephone number is 571-270-1246. The examiner can normally be reached on Monday thru Friday; 9:00am - 5:00pm.

59. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bunjob Jaroenchonwanit can be reached on 571-272-3913. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

60. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TJD

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